EXHIBIT 2

Recommendation for Revising the Clinician's Manual for the Retired NFL Football Players' Baseline Assessment Program: Using Age and Education Adjusted Normative Reference Values and Revised Cutoffs for Defining Low Scores

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The Baseline Assessment Program (BAP) includes a battery of neuropsychological tests and clinical rating instruments designed to provide a standardized evaluation of the cognitive functioning of retired professional football players. Section 4 of the Baseline Neuropsychology Test Battery and Specific Impairment Criteria for Retired NFL Football Players set forth in Exhibit A-2 of the Settlement Agreement (the "Test Battery") references a "user manual" to be provided to neuropsychologists setting out the cutoff scores, criteria for identifying impairment in each cognitive domain, and statistical normative data to support the impairment criteria. Consistent with general practices in the field of clinical neuropsychology, that user manual suggested using fully-demographically adjusted T scores as the normative reference values for interpreting the neuropsychological test scores. Fully demographically adjusted T scores consider a person's age, sex, level of education, and race in a regression model for deriving a normative score.

Instructions Given to the Working Group

The working group was instructed by the legal parties to *remove race as a variable for consideration when scoring or classifying test results from the neuropsychological evaluations* of retired National Football League (NFL) players participating in the BAP.

Summary of Recommended Changes

In order to remove race as a variable from scoring the neuropsychological tests, three changes to the current system are recommended. First, discontinue the use of estimating longstanding ("premorbid") functioning using the Test of Premorbid Functioning Simple and Complex equations. Instead, estimate longstanding Reading Level only using the TOPF Reading Standard Score. Second, discontinue the use of fully demographically adjusted normative reference values and replace that system with normative reference values adjusted for age and education only (when available, as described below). Third, raise the cutoff scores for defining low scores in a modest manner across reading levels and cognitive domains.

Estimating Longstanding Reading Level

The current methodology is to use either the Test of Premorbid Functioning (TOPF) Reading Standard Score or the TOPF Reading score combined with "simple demographics" or "complex demographics" to estimate longstanding ability. Both of the latter methods use race as one of many variables in a regression model (e.g., the "simple" model includes region of the country, sex, race, education, and occupation). The use of the regression models (i.e., "simple" or "complex" demographics) for the TOPF will be discontinued. Instead, only the TOPF Reading

Standard Score will ordinarily be used.[1] There are many published studies, over many years, supporting the use of a reading test for this purpose, including published studies illustrating the usefulness of using a reading test in evaluations with Black older adult Americans. The reading score is positively correlated with neuropsychological test performance in retired NFL players, meaning that, on average, those scoring higher on the reading test obtain higher scores on other neuropsychological tests, and those scoring considerably lower on the reading test, on average, obtain lower scores on other neuropsychological tests. The term "premorbid" functioning will not be used in the algorithms for defining impairment. Instead, the term "reading level" will be used (i.e., Below Average Reading Level, Average Reading Level, and Above Average Reading Level).

Using Age- and Education-Adjusted Normative Scores

For the subtests from the Wechsler Adult Intelligence Scale-Fourth Edition (WAIS-IV) and the Wechsler Memory Scale-Fourth Edition (WMS-IV), use age- and education-adjusted T scores instead of fully demographically adjusted T scores. The normative sample for the Expanded Halstead-Reitan Neuropsychological Battery (E-HRNB) currently used for deriving normative scores for the Trail Making Test (Parts A and B), Controlled Word Association Test (Letter Fluency, F-A-S) and Category Fluency (Animal Naming), Boston Naming Test, and the Booklet Category Test, will be discontinued for all tests except the BDAE Complex Ideation Test. For the other tests, meta-norms from Mitrushina et al. (2005)[2] will be used.

For one test in the BAP battery, the Boston Diagnostic Aphasia Exam Complex Ideational Material subtest, the E-HRNB normative T scores can continue to be used. As indicated on page 20 (Table 4) of the professional manual, no Black adults were included in the normative sample for that test, so the demographically adjusted T scores do not include race as a variable in norming. Therefore, these norms are identical for both racial groups (and no suitable alternative norms have been identified). This test is not included in the Mitrushina et al. (2005) handbook, and meta-normative data for this test are not available. Therefore, the E-HRNB normative reference values will be retained.

[1] The TOPF Reading Standard Score should not be used for choosing an algorithm when the examiner has a strong indication from the patient's history, behavioral observations, and other language test results suggesting that an acquired language disorder or severe learning disability is present. Moreover, if English was learned as a second language in adulthood, the TOPF Reading Standard Score need not be relied upon for choosing an algorithm. If a clinician documents a person's reading score to be fundamentally inaccurate and not representative of his longstanding reading ability, that person could be classified as having "Average Reading Level" for the purpose of applying the algorithms below. Having poor reading skills, or a possible mild learning disability, is not a rationale for classifying a person in a higher reading level (i.e., from Below Average to Average Reading Level). However, a clinician can use clinical judgement in cases of severe language-based learning disability (i.e., severe dyslexia) to use the Average Reading Level algorithms.

[2] Mitrushina M, Boone KB, Razani J, D'Elia LF. Handbook of normative data for neuropsychological assessment. 2nd ed. New York, NY: Oxford University Press; 2005.

Specific Steps for Classifying Levels of Cognitive Impairment

The specific steps illustrating the recommended changes are set out below.

1) Classification of reading level is determined based on the **TOPF Reading Standard Score** using the 3 classifications below.
   a) TOPF Standard Score < 90 = Below Average Reading Level.
   b) TOPF Standard Score 90 - 109 = Average Reading Level.
   c) TOPF Standard Score ≥ 110 = Above Average Reading Level.

2) Use T-distribution scores (i.e., "T scores"), adjusted for age and education, to summarize neuropsychological test performance. There are 3 tests for which the Mitrushina et al. meta-norms adjust for age only, as described below.
   a) Use age and education norms provided by the Advanced Clinical Solutions software package for the WAIS-IV and WMS-IV tests included in the battery.
   b) Use meta-norms from Mitrushina et al. (2005) that are based on age and education for the other tests included in the battery with the exceptions listed below. Age and education adjusted meta-norms are used for Trail Making Test, Part A, Trail Making Test, Part B, and the Controlled Oral Word Association, Letter Fluency (F-A-S) test.
      i) Mitrushina meta-norms are not available for the Boston Diagnostic Aphasia Exam Complex Ideational Material subtest. The Expanded Halstead-Reitan Neuropsychological Battery norms can continue to be used for this test. The demographically adjusted T scores for this test do not include race as a variable in norming.
      ii) Mitrushina meta-norms for the Boston Naming Test, the Category Test, and the Controlled Oral Word Association Category Fluency (Animal Naming) Test include age, but not education adjustments, because education was not an important predictor of test scores in the meta-regression equations—and thus the authors did not recommend an education adjustment to the meta-norms.

3) In the tables below, there are no changes to the structure of the performance classification algorithms, as set out in the current Clinician's Manual. The changes to the cutoffs for defining low scores were informed by statistical analyses of data from retired players who have undergone evaluations, knowledge of base rates of low scores among adults in normative samples, and clinical judgement. Slight adjustments could occur if errors are found as a result of the final verification process.

4) The algorithms for classifying cognitive impairment within each cognitive domain, stratified by reading level, are provided in Tables 1-3 below.

Table 1. Impairment Criteria: Below Average Reading Level

Complex Attention and Processing Speed (6 test scores)
1. Level 1 Impairment: 3 or more scores below a T score of 37
2. Level 1.5 Impairment: 4 or more scores below a T score of 37; or meet for Level 1 and 2 scores below a T score of 32
3. Level 2 Impairment: 3 or more scores below a T score of 32
Learning and Memory (6 test scores)
1. Level 1 Impairment: 3 or more scores below a T score of 37
2. Level 1.5 Impairment: 4 or more scores below a T score of 37; or meet for Level 1 and 2 scores below a T score of 32
3. Level 2 Impairment: 3 or more scores below a T score of 32
Visual-Perceptual (3 test scores)
1. Level 1 Impairment: 3 or more scores below a T score of 39
2. Level 1.5 Impairment: meet for Level 1 and 2 scores below a T score of 37
3. Level 2 Impairment: 3 or more scores below a T score of 37
Language (3 test scores)
1. Level 1 Impairment: 3 or more scores below a T score of 39
2. Level 1.5 Impairment: meet for Level 1 and 2 scores below a T score of 37
3. Level 2 Impairment: 3 or more scores below a T score of 37
Executive Function (4 test scores)
1. Level 1 Impairment: 2 or more scores below a T score of 37
2. Level 1.5 Impairment: 3 or more scores below a T score of 37; or meet for Level 1 and 1 score below a T score of 32
3. Level 2 Impairment: 2 or more scores below a T score of 32

Table 2. Impairment Criteria: Average Reading Level

Complex Attention and Processing Speed (6 test scores)
1. Level 1 Impairment: 2 or more scores below a T score of 38
2. Level 1.5 Impairment: 3 or more scores below a T score of 38; or meet for Level 1 and 1 score below a T score of 33
3. Level 2 Impairment: 2 or more scores below a T score of 33
Learning and Memory (6 test scores)
1. Level 1 Impairment: 3 or more scores below a T score of 38
2. Level 1.5 Impairment: 4 or more scores below a T score of 38; or meet for Level 1 and 1 score below a T score of 33
3. Level 2 Impairment: 2 or more scores below a T score of 33
Visual-Perceptual (3 test scores)
1. Level 1 Impairment: 2 or more scores below a T score of 40
2. Level 1.5 Impairment: 3 or more scores below a T score of 40; or meet for Level 1 and 1 score below a T score of 38
3. Level 2 Impairment: 2 or more scores below a T score of 38
Language (3 test scores)
1. Level 1 Impairment: 2 or more scores below a T score of 40
2. Level 1.5 Impairment: 3 or more scores below a T score of 40; or meet for Level 1 and 1 score below a T score of 38
3. Level 2 Impairment: 2 or more scores below a T score of 38
Executive Function (4 test scores)
1. Level 1 Impairment: 2 or more scores below a T score of 38
2. Level 1.5 Impairment: 3 or more scores below a T score of 38; or meet for Level 1 and 1 score below a T score of 33
3. Level 2 Impairment: 2 or more scores below a T score of 33

Table 3. Impairment Criteria: Above Average Reading Level

Complex Attention and Processing Speed (6 test scores)
1. Level 1 Impairment: 2 or more scores below a T score of 38
2. Level 1.5 Impairment: meet for Level 1 and 3 or more scores below a T score of 40
3. Level 2 Impairment: 3 or more scores below a T score of 38
Learning and Memory (6 test scores)
1. Level 1 Impairment: 2 or more scores below a T score of 38
2. Level 1.5 Impairment: meet for Level 1 and 3 or more scores below a T score of 40
3. Level 2 Impairment: 3 or more scores below a T score of 38
Visual-Perceptual (3 test scores)
1. Level 1 Impairment: 2 or more scores below a T score of 43
2. Level 1.5 Impairment: 3 scores below at T score of 43; or meet for Level 1 and 1 score below a T score of 40
3. Level 2 Impairment: 2 or more scores below a T score of 40
Language (3 test scores)
1. Level 1 Impairment: 2 or more scores below a T score of 43
2. Level 1.5 Impairment: 3 scores below at T score of 43; or meet for Level 1 and 1 score below a T score of 40
3. Level 2 Impairment: 2 or more scores below a T score of 40
Executive Function (4 test scores)
1. Level 1 Impairment: 2 or more scores below a T score of 40
2. Level 1.5 Impairment: meet for Level 1 and 3 or more scores below a T score of 40; or meet for Level 1 and 1 score below a T score of 33
3. Level 2 Impairment: 2 or more scores below a T score of 33